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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/711,177	08/30/2004	Po Liang Chiang	TOCP0001USA	5176
27765	7590	08/31/2005	EXAMINER	
NORTH AMERICA INTELLECTUAL PROPERTY CORPORATION P.O. BOX 506 MERRIFIELD, VA 22116			ROJAS, OMAR R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/711,177	Applicant(s) CHIANG ET AL. 	
	Examiner Omar Rojas	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 30, 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Detailed Action</u> .                  |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 24. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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**4. Claims 1, 2, and 4 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Patent Publication 2001/0008470 A1 to Dewald.**

Regarding claim 1, Dewald discloses a polarization conversion light pipe device (Figures 9-10) comprising:

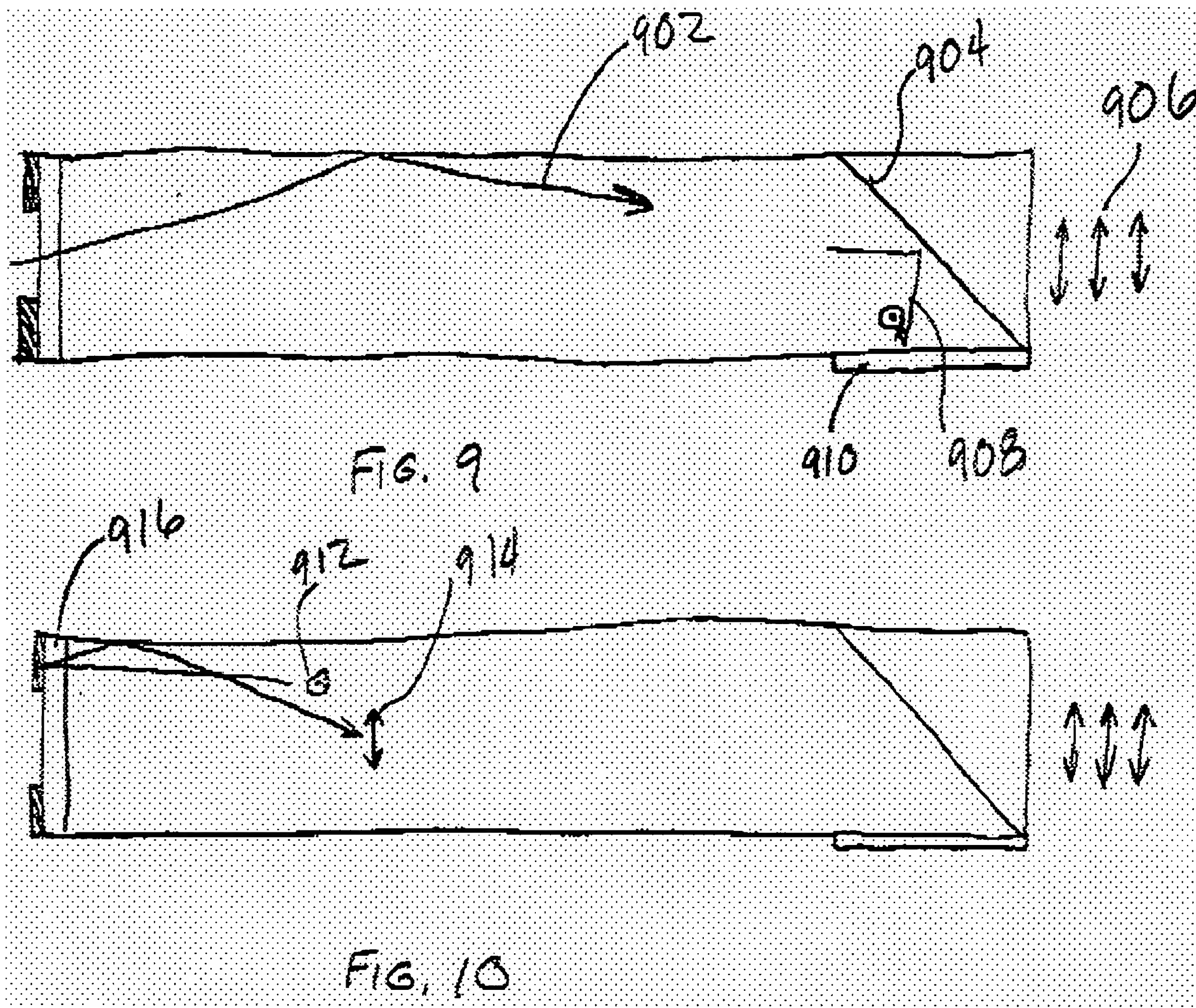
An integrating rod defined by four side reflective mirrors, wherein the light tunnel has a rectangular cross-section and has a light entrance face and a light exit face (see paragraph [0045]);

A front reflective mirror 302 (not labeled in Figures 9-10) mounted at the light entrance face with an aperture [0042];

A retardation plate 916 situated within the integrating rod;

A polarizing beam splitter 904 that is substantially 45 degree-inclined with respect to one of the side reflection mirrors, and is located with the light tunnel between the retardation plate 916 and the light exit face. Figures 9 and 10 of Dewald are reproduced below.

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Regarding claim 2, the limitation is inherently disclosed by Dewald because Dewald uses a quarter-wave plate for retardation plate 916.

Regarding claim 4, the polarizing coating 904 of Dewald functions a polarizing beam splitter.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald as applied to claim 1 above, and further in view of Patent No. 6,739,723 B1 to Haven et al. (hereinafter "Haven").**

Regarding claim 3, the previous remarks concerning Dewald are incorporated herein. Dewald differs from claim 3 only in that Dewald does not disclose using a wire grid polarizer. The Haven patent teaches using a wire grid polarizer 117 within a light tunnel 115 similar to that of Dewald. The technical advantages of using a wire grid polarizer are numerous (i.e., "wide acceptance angle"). Haven at col. 7, lines 24-45. Therefore, it would have been obvious to one

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of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 3.

**8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dewald as applied to claim 1 above, and further in view of Patent No. 5,223,975 to Naganuma et al. (hereinafter "Naganuma").**

Regarding claim 5, the previous remarks concerning Dewald and claim 1 are incorporated herein. Dewald differs from claim 5 only in that Dewald does not disclose a 90-45-45 degree triangle prism. However, using 90-45-45 degree triangle prisms for polarization beam splitting ("PBS") was well known in the art at the time of the claimed invention. The Naganuma patent discloses a PBS element 36 comprising 90-45-45 degree triangle prisms. It would have been obvious to one of ordinary skill in the art to use 90-45-45 prisms in the invention of Dewald since such prisms were known in the art for achieving polarization beam splitting.

Regarding claim 6, the previous remarks concerning Dewald and claim 1 are incorporated herein. Dewald differs from claim 6 only in that Dewald does not disclose the retardation plate adhered to the polarizing beam splitter. The Naganuma patent teaches a retardation plate 35 adhered to a polarizing beam splitter 36 as seen in Figure 6. The motivation for combining the teachings of Naganuma with Dewald is to achieve an integration of parts, namely the retardation plate and the beam splitter already taught by Dewald. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the claimed invention to obtain the invention specified by claim 6.

*Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The McGettigan and Kang patents cited on the attached form PTO-892 also teach light tunnels having similar features to that claimed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Omar Rojas whose telephone number is (571) 272-2357. The examiner can normally be reached on Monday-Friday (12:00PM-8:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rod Bovernick, can be reached on (571) 272-2344. The official facsimile number for regular and After Final communications is (571) 273-8300. The examiner's RightFAX number is (571) 273-2357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Omar Rojas  
Patent Examiner  
Art Unit 2874

or  
August 28, 2005